ASSOCIATION OF BREAST SURGERY

ASSOCIATION OF BREAST SURGERY GUIDELINES

Management of the Axilla: Multidisciplinary Recommendations from the Association of Breast Surgery

This guidance is endorsed by the following organisations:

ASSOCIATION OF BREAST PATHOLOGY

BSBR
BRITISH SOCIETY OF BREAST RADIOLOGY

UKBCG

NCCBP

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EXECUTIVE SUMMARY

Axillary management in breast cancer patients is an area that continues to evolve. Since publication of the Association of Breast Surgery's (ABS') guidelines on axillary management following neoadjuvant chemotherapy in 2019, there have been significant changes in routine clinical practice. This, together with the results of recent clinical trials and studies, prompted the Executive Board of the ABS to convene a multi-disciplinary writing group to produce pragmatic new recommendations to guide axillary management in the UK.

The principal objective was to promote good practice and offer clinical teams optimal strategies for axillary management in terms of diagnosis, timing and type of treatment. Primarily covering surgical treatment of the axilla, the recommendations also include relevant aspects of diagnostic imaging and pathology, as well as axillary radiotherapy.

These recommendations relate to patients with early-stage breast cancer [I, IIA, and IIB (T1, T2, N0, N1, M0)]. Reference to some stage IIIA patients with T3N1 tumours has been included, but much of the published evidence focuses on primary tumours ≤5cm with fewer than 3 involved nodes. The recommendations have drawn on existing national and international guidelines and critical review of the evidence. For ease of use, this document contains a list of abbreviations and glossary of terms together with methodology at the beginning followed by the recommendations (levels/grades of evidence).

The recommendations cover techniques for axillary surgery (Section 1), primary surgery for patients who are lymph node negative at diagnosis (no biopsy proven metastases) (Section 2), primary surgery for patients who have biopsy proven lymph node metastases (Section 3), scenarios where omission of sentinel lymph node biopsy may be considered (Section 4), management of the axilla in patients who have NACT (Section 5) and special scenarios including the management of the axilla in patients with DCIS for example (Section 6).

The final section covers radiological and pathological considerations relating to the relevant sections (Section 7). Highlights include guidance for the use of targeted axillary dissection after NACT to standardise practice across the UK. The use of targeted axillary dissection for patients with biopsy proven lymph node metastases, who are going to have surgery first (rather than neoadjuvant chemotherapy), is more contentious because of a lack of evidence. Therefore, the position of the ABS Executive Board is to firmly encourage breast units to join the NIHR funded TADPOLE trial comparing TAD without axillary RT to ALND in patients with T1-2 disease N1 disease (1-2 malignant lymph nodes on ultrasound).

Qualifying statements are intended to add extra, relevant information to inform discussions and provide context, and may originate from other sources outside the critical literature review. Some may be based on UK/NHS safety, regulatory and governance procedures and others on the opinion and consensus of the multi-disciplinary writing group.

Where patient characteristics fall outside trial inclusion criteria, axillary management should be based on individual multi-disciplinary case discussions and unless otherwise stated this guidance applies to all tumour subtypes.

Choices regarding axillary management are often nuanced, and shared decision making with patients, taking account of factors such as age, preference, co-morbidities and other clinical circumstances, is strongly recommended.

Narrative summaries relating to the evidence-base for these guidelines will be published serially as a journal article collection in due course.

LIST OF ABBREVIATIONS AND GLOSSARY OF TERMS:

ABS	Association of Breast Surgery
ALLIANCE	Alliance for Clinical Trials in Oncology
ALND	Axillary lymph node dissection
ATNEC	Axillary management in T1-3N1M0 breast cancer patients with needle biopsy proven nodal metastases at presentation after neoadjuvant chemotherapy
Axillary treatment	Axillary lymph node dissection or axillary radiotherapy
BCS	Breast conserving surgery
CDK	Cyclin dependent kinase
DCIS	Ductal carcinoma in situ
ECE	Extracapsular extension
ER	Oestrogen receptor
FNAC	Fine-needle aspiration cytology
H&E	Haematoxylin and Eosin
IBC	Inflammatory breast cancer
IBTR	Ipsilateral breast tumour recurrence
ICG	Indocyanine green
ITCs	Isolated tumour cells
MDT	Multidisciplinary team
MDR	Medical Device Regulation
MHRA	Medicines and Healthcare products Regulatory Agency
MRI	Magnetic resonance imaging
NACT	Neoadjuvant chemotherapy
NCCP	National Co-ordinating Committee for Breast Pathology
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NIHR	National Institute for Health and Care Research
OSNA	One-step Nucleic Acid Amplification
pCR	Complete pathological response
PMRT	Post-mastectomy radiotherapy
PR	Progesterone receptor
rN0	Radiologically node negative
RCT	Randomised controlled trial
RT	Radiotherapy
SLN	Sentinel lymph node
SLNB	Sentinel lymph node biopsy
SENTINOT	Sentinel node biopsy in ductal cancer in situ; how to NOT do it
TAD	Targeted axillary lymph node dissection

METHODOLOGY

Structure, scope and content
These pragmatic guidelines have been developed around the following key questions that provide a framework for these recommendations:

- Is any further axillary treatment indicated in primary surgery patients who are SLNB negative at diagnosis?
- What is the optimum management for primary surgery patients who are clinically node negative at presentation but pathologically node positive after SLNB?
- Can targeted axillary lymph node dissection (TAD) be safely and effectively employed in the primary surgical setting for needle biopsy confirmed node positive patients with low volume nodal disease?
- What is the optimum strategy for type and timing of axillary treatment in patients managed with neoadjuvant chemotherapy presenting with clinically node negative disease (needle biopsy negative)?
- What is the optimum strategy for type and timing of axillary treatment in patients managed with neo-adjuvant chemotherapy and presenting with biopsy-proven node positive disease?
- Can a group of patients be identified in whom surgical axillary staging can be safely omitted based on age and tumour grade, stage and biology at presentation?
- What are the optimal methods for identifying sentinel nodes in terms of tracer agents and localizing biopsied/clipped positive nodes after downstaging with neo-adjuvant chemotherapy?

This framework consists of 5 main sections with additional ones addressing SLNB for breast cancer patients in special circumstances and specific issues relating to radiological and pathological assessment:

Section 1	Techniques for Axillary Surgery
Section 2	Primary Surgery (pathologically node negative)
Section 3	Primary Surgery (pathologically node positive)
Section 4	Omission of Axillary Surgery
Section 5	Neoadjuvant Chemotherapy
Section 6	Techniques for Axillary Surgery
Section 7	Radiological diagnosis and pathological assessment of axillary lymph node specimens

These guidelines do not provide details about non-surgical techniques such as axillary and regional nodal radiotherapy, but have enlisted input from radiation oncologists to ensure consistency with radiotherapy guidelines.

Writing Group
A writing group comprised primarily of surgeons from academic, teaching and district general hospitals was convened. Members were drawn from the Clinical Practice and Standards Committee and the Executive Board of the ABS. These updated guidelines have multidisciplinary input with representation from pathology, radiology and clinical, medical and geriatric oncology, together with a patient advocate. A radiation oncologist was nominated by the UK Breast Cancer Group (UKBCG), who was closely involved in development and review of the draft guidelines from a radiotherapy perspective, especially the role of radiation treatment in the context of de-escalating axillary surgery. These recommendations are not intended to provide comprehensive coverage of radiation treatment, but focus on specific areas relating to administration of regional nodal irradiation in patients with 1 – 3 positive nodes (and/or T3 tumours, higher biological risk), the role of axillary irradiation versus axillary lymph node dissection and any additional benefit of axillary radiotherapy compared with no further axillary treatment.

Members of the Working Group were allocated to one or other section and were responsible for gathering and evaluating evidence, deriving recommendations and drafting narrative summaries for each section. These sectional groupings were composed of 4 individuals and typically included a member of the Mammary Fold (trainees forum). The latter was tasked with initiating the preliminary literature searches, selection of relevant publications and grading of evidence.

A series of face to face and online meetings were held between April 2024 and December 2025, where evidence and serial iterations of the guidelines were reviewed and agreed.

Evidence for certain recommendations was supported by high quality data from randomised trials, meta-analyses or prospective/retrospective studies whilst others were underpinned by less rigorous evidence.

In these circumstances, the available evidence was reviewed by the Working Group and a consensus opinion reached based on expert opinion. The final version of the draft document was circulated to all members of the Working Group together with wider ABS Committee membership and a patient representative.

Endorsement has been sought from affiliated professional bodies including the UK Breast Cancer Group (UKBCG), the Association of Breast Pathology (ABP) and the British Society of Breast Radiology (BSBR). This aims to ensure that updated guidelines are accurate and recommendations are consensual and align with those of other organisations. It should be noted that the International Society of Geriatric Oncology (SIOG) has provided specific input for these guidelines relating to older patients and their suitability for a range of options covering various treatment modalities. Furthermore, these updated guidelines have drawn on existing international guidelines and generated algorithms that are tailored to local practice within the UK.

Evidence base and search terms
These guidelines are of very broad scope, covering a wide range of different elements of axillary practice. Where appropriate, a systematic online search and evaluation of the literature was undertaken for key issues with narrative summaries of key evidence from which recommendations were derived for contemporary clinical management. Literature searches were undertaken using one or more of the following databases: PubMed, Medline, Cochrane and Embase. These were performed initially between July 2024 and November 2024 with periodic updated searches up until April 2026 that focussed on high-quality, randomised controlled trials and large observational studies.

Separate searches were performed with relevant Medical Search (MeSH) terms for each of the 5 main sections (1 – 5) and the special scenarios section (6). Search terms for sections 1 - 5 are listed in Table 1 and are restricted to English language publications over the past 20 years.

These findings were supplemented by the best available observational data where appropriate.

Table 1. Listing of the key search terms for each section of the review.

Section No.	Topic of review	Search terms
1	Techniques of axillary surgery	[Breast neoplasms] or [breast cancer] or [breast neoplasms] or [breast carcinoma] [surg] or [axilla] or [breast surg] [sentinel lymph node biopsy] or [lymph node excision] or [lymph node] [patent blue] or [blue dye] or [radioactive tracer] or [radioisotope] or [dual tracer technique] or [indocyanine green] or [magtrace] or [superparamagnetic iron oxide nanoparticles] or [microbubbles]
2	Primary surgery (node negative)	[breast neoplasms] or [breast cancer] or [breast carcinoma] or [breast tum] [surg] or [axilla] or [breast surg] or [axilla and staging] [sentinel lymph node biopsy] or [lymph node excision] or [lymph node], or [SLNB] or [sentinel lymph node] [axilla] and clearance] or [dissection] or [excision] or [lymphadenectomy] [clinical trial]
3	Primary surgery (node positive)	[breast cancer] or [sentinel lymph node] or [SNB] or [ALND] or [axillary lymph node dissection] or [axillary radiotherapy] or [micrometatases] or [macrometastases] or [isolated tumour cells] or [four node sampling] or [no axillary surgery] or [randomised trial]
4	Omission SLNB	[de-escalation] or [[sentinel lymph node biopsy] or [surgery and omission sentinel lymph node biopsy]
5	Axillary management in NACT	[breast neoplasm] or [breast cancer/breast carcinoma] [neoadjuvant] or [preoperative chemotherapy] or[primary systemic therapy] [axilla] or [axillary] or [axillary lymph node] or [nodal disease] [sentinel lymph node biopsy] or [SLNB] or [targeted axillary dissection] or [TA] or [marked lymph node] or[clipped node] or [targeted lymph node biopsy] or [axillary dissection] or [ALND] or [axillary surgery] or [axillary management]
6	Special scenarios	Key references searched
7	Radiology and pathology	Expert opinion from radiologist and pathologist representatives

Quality assurance and levels of evidence
References were reviewed against standardized methods for assessment of bias (e.g. Revised Cochrane Risk of Bias (RoB2) tool) and graded according to the European Society of Medical Oncology (ESMO) guidelines.

Each statement is accompanied by a number (I – IV) indicating the level of evidence:

Level I	Large RCT/meta-analysis without heterogeneity
Level II	Smaller RCTs or larger RCT with risk of bias
Level III	Prospective studies
Level IV	Retrospective studies or case-controlled studies
Level V	Studies without controls, case reports, expert opinion

A letter denoting the strength of recommendation was also allocated to each statement:

A	Strongly recommended.
B	Generally recommended.
C	Optional.
D	Generally do not recommend.
E	Never recommend.

Level A recommendations indicate that the clinical benefits of a procedure clearly outweigh any disadvantages. Where there is low-quality evidence with a reasonable balance between advantages/disadvantages, then any recommendation is necessarily weak and classified as C or D. The degree of certainty is reduced when there is risk of bias and high levels of heterogeneity and/or publication bias. The level of certainty is increased when the magnitude of effect is large and there is obvious clinical benefit. Nonetheless, much of the evidence informing the key questions posed above are derived from phase III randomised trials and/or meta-analyses of high-quality data (levels I and II). These updated guidelines are therefore underpinned by robust evidence overall with minor areas of contention that await emergence of further data.

RECOMMENDATIONS

SECTION 1: TECHNIQUES FOR AXILLARY SURGERY

Conventional tracer agents for sentinel lymph node biopsy (SLNB): Radioisotope and blue dye

1.1) Patent Blue V is the preferred choice of blue dye and associated with a lower risk of anaphylaxis than its isomer isosulphan blue. **[I/A]**

Qualifying Statements:
Any episodes of anaphylaxis to any agent used for axillary lymph node identification should be reported using the MHRA yellow card system.

1.2) Dual tracer techniques with radioisotope and blue dye should be considered standard of care. **[I/A]**

1.3) Use of radioisotope alone is acceptable with primary surgery when there is a good percutaneous signal. **[I-II/A-B]**

Qualifying Statements:
Use of radioisotope alone avoids anaphylactic risk and staining of tissue.

1.4) Use of blue dye alone with primary surgery is acceptable when radioisotope is unavailable due to supply issues and there is no access to alternative tracers (lower identification rates but similar false negative rates). **[II/D]**

1.5) Standard techniques for SLNB should aim to remove between 1 and 3 sentinel lymph nodes with an average nodal count of approximately 2. **[I/A]**

Use of lymphoscintigraphy

1.6) Use of lymphoscintigraphy to aid identification of sentinel lymph nodes and reduce false negative rates for SLNB is not routinely required. **[I/A]**

Alternative tracer agents for SLNB

1.7) Alternative tracer agents such as indocyanine green (ICG) and magnetic particles have high levels of technical accuracy and favourable performance parameters for SLNB in early breast cancer patients (including detection of positive lymph nodes). **[II-III/B-C]**

Qualifying Statements:
In addition to specific technical aspects, the following should also be taken into consideration when using these newer tracer agents a) *NICE technology appraisal.* b) *UKCA/ EU MDR device approvals.* c) *Availability of results from longer term studies of efficacy (oncological outcomes) with appropriate follow up and statistical power.* d) *Compatibility with other devices being used including potential signal crossover that may adversely affect tumour localisation.* e) *Technological upgrades in equipment as manufacturers respond to usability issues in clinical practice.* f) *New technologies should be introduced in line with local trust governance procedures.*

Technical failure of SLNB

1.8) A minimum of 4 lymph nodes should be retrieved (4 node sample) following failed sentinel lymph node localisation. **[II-III/B]**

Targeted axillary dissection (TAD) post-neoadjuvant chemotherapy (NACT)

1.9) If there are 2 – 3 abnormal lymph nodes on ultrasound, only the largest or most accessible lymph node should be biopsied and clipped. **[V/C]**

1.10) Targeted axillary dissection with use of single or dual tracer localisation and removal of the clipped lymph node (specimen radiography should confirm the clip is present) will minimise false negative rates. **[II-III/B]**

1.11) If the clipped lymph node is not retrieved and a dual tracer technique has been employed, a minimum of 3 lymph nodes should be removed (otherwise ALND should be performed to minimise false negative rates). **[III/B]**

1.12) Pre-operative localisation of the clipped lymph node can be done with one of several methods (wire, magnetic/radioactive seed **[III/B]** and radar reflectors **[III-IV/C]).** Alternatively, carbon dye tattooing can be used for intra-operative identification of previously biopsied lymph nodes. **[III/B]**)

1.13) The metastatic lymph node should be marked at the time of diagnostic axillary ultrasound biopsy, or shortly thereafter, with an ultrasound visible marker clip and storage static representative images should be available. **[III/B]**

Qualifying Statements:

If carbon dye tattooing is used for node marking, then consider using the ATNEC protocol [ClinicalTrials.govNCT04109079] for technical considerations. It should be noted that carbon dye does not change the ultrasound features of marked lymph nodes and therefore these lymph nodes cannot be localised pre-operatively. Removal of carbon marked lymph nodes is dependent upon visual inspection during surgical dissection.

1.14) The clipped lymph node can be localised either pre- or post-NACT using the same non-wire device as used for the primary breast tumour. **[III-IV/C]**

Qualifying Statements:

A non-wire localiser device can be inserted into the lymph node once there is biopsy confirmation of a metastatic lymph node. If MRI is routinely used for staging and assessment of disease response, a magnetic device is not recommended as these can cause significant artifacts, typically creating a void or image distortion that impedes diagnostic assessment.

1.15) The histology report should comment on the presence of the clipped lymph node and/or fibrosis consistent with previous metastatic involvement of node and disease response. **[III-IV/A]**

Axillary lymph node dissection (ALND)

1.16) Standard ALND should only be performed to level II and not routinely to level III. **[IV/B]**

Qualifying Statements:

There is no additional benefit from routine dissection of lymph nodes from level III unless there is:

a) *radiological evidence of involvement at this level or*
b) *extensive macroscopic involvement of level II lymph nodes*

1.17) Level II ALND should respect the anatomical boundaries of the axilla and stop at the medial border of pectoralis minor. High nodal yields increase morbidity with no meaningful benefit in terms of oncological outcomes (regional and distant recurrence). **[IV/C]**

1.18) Upon completion of an ALND procedure, a marker clip should be placed at the limit of surgical dissection and documented in the operation note (to assist with radiotherapy planning). **[V/A]**

SECTION 2: PRIMARY SURGERY (PATHOLOGICALLY LYMPH NODE NEGATIVE)

2.1) Clinically lymph node negative patients with normal axillary lymph nodes on ultrasound (or benign core biopsy/FNAC) who proceed to SLNB and have no histological evidence of lymph node metastases (including patients with only ITCs*) do not require further axillary treatment (ALND or axillary radiotherapy) irrespective of breast conserving surgery or mastectomy.

DEFINITIONS:
**isolated tumour cells (≤0.2mm), micrometastases (>0.2mm and ≤2mm), macrometastases (>2mm)*

2.2) Clinically node negative patients with normal axillary lymph nodes on ultrasound (or benign core biopsy/FNAC) who proceed to SLNB and are found to have only lymph node metastases measuring ≤2mm (ITC or micrometastases) do not require further axillary treatment (ALND or axillary radiotherapy) irrespective of breast conserving surgery or mastectomy. **[I-II/A]**

2.3) Regional nodal irradiation is not generally recommended for this group of sentinel lymph node negative patients with medial/central tumours that have no high-risk features for recurrence (grade 3, ER/PR negative, HER2 positive, size ≥5cm). **[II-III/C]**

SECTION 3: PRIMARY SURGERY (PATHOLOGICALLY LYMPH NODE POSITIVE)

Radiologically lymph node negative at presentation (no FNA/biopsy proven metastasis)

3.1) No further axillary treatment is indicated for post-menopausal patients undergoing breast conserving surgery with planned adjuvant radiotherapy and systemic therapy who have 1 or 2 sentinel lymph nodes containing macrometastases and who have all the following tumour characteristics – T1, grade 1 or 2, strongly hormone receptor positive, HER2 negative and no extra-capsular extension. **[II/A]**

3.2) Further axillary treatment is recommended (see qualifying statements) for patients undergoing breast conserving surgery with planned adjuvant radiotherapy and systemic therapy who have 1 or 2 sentinel lymph nodes containing macrometastases and have any of the following patient/tumour characteristics – pre-menopausal, T2, grade 3, hormone receptor negative, HER2 positive, lymphovascular infiltration into the breast parenchyma or extra-capsular extension. **[II/B]**

3.3) Further axillary treatment should be considered for patients undergoing mastectomy with 1-2 SLNs containing macrometastases, some of whom will receive post-mastectomy radiotherapy. **[II/B]**

Qualifying Statements:

a) *Axillary radiotherapy is preferred to ALND (lower risk of lymphoedema) in the setting of clinically and radiologically normal axillary lymph nodes (cN0) at diagnosis.*

b) *Axillary radiotherapy is preferred to ALND for cN0 patients at diagnosis (lower risk of lymphoedema) for patients receiving post-mastectomy radiotherapy.*

c) *Lower risk mastectomy patients (postmenopausal with T1 and grade 1 or 2 tumours) could be considered for chest wall irradiation only as the lower axillary lymph nodes will receive some radiotherapy dosage.*

d) *High-risk mastectomy patients should be considered for both chest wall & axillary radiotherapy.*

e) *For those cases where radiotherapy is contraindicated or declined, further axillary surgery is recommended with ALND.*

f) *There is limited evidence suggesting that not all T3 tumours require ALND and are potentially suitable for axillary radiotherapy on a case-by-case basis following local MDT discussion.*

g) *ALND rather than axillary radiotherapy should be considered where nodal metastases are associated with extensive extra-capsular spread, especially for T3 tumours.*

3.4) Patients undergoing breast conserving surgery or mastectomy with 3 or more positive sentinel lymph nodes or T3 tumours should proceed to ALND **[II/A]**.

Radiologically lymph node positive at presentation (FNA/biopsy proven metastasis)

3.5) For patients with T1 or T2 tumours with biopsy proven lymph node metastases, who have ≤2 abnormal lymph nodes on imaging and having primary surgery, the current standard of treatment is ALND (see section 3.6 for emerging strategy). **[V/D-E]**

3.6) Primary SLNB with targeted axillary dissection (TAD) is being explored as a clinically appropriate alternative for this group of patients and should employ dual or single tracer techniques with localization of the marked/biopsied node, and removal of sentinel nodes. In the event of a false negative result (malignant lymph node not retrieved), patients should proceed to ALND. **[III-IV/B-C]**

Qualifying Statements:

a) *For centres where ALND is standard of care, patients should be encouraged to participate in the NIHR TADPOLE trial (comparing TAD without axillary RT to ALND (patients with T1-2 N1 disease, 1-2 abnormal lymph nodes on ultrasound with biopsy proven malignant node)) (ISRCTN71954670). If the trial is not available on site, consideration of referral to a nearby centre where TADPOLE is offered should be considered.*

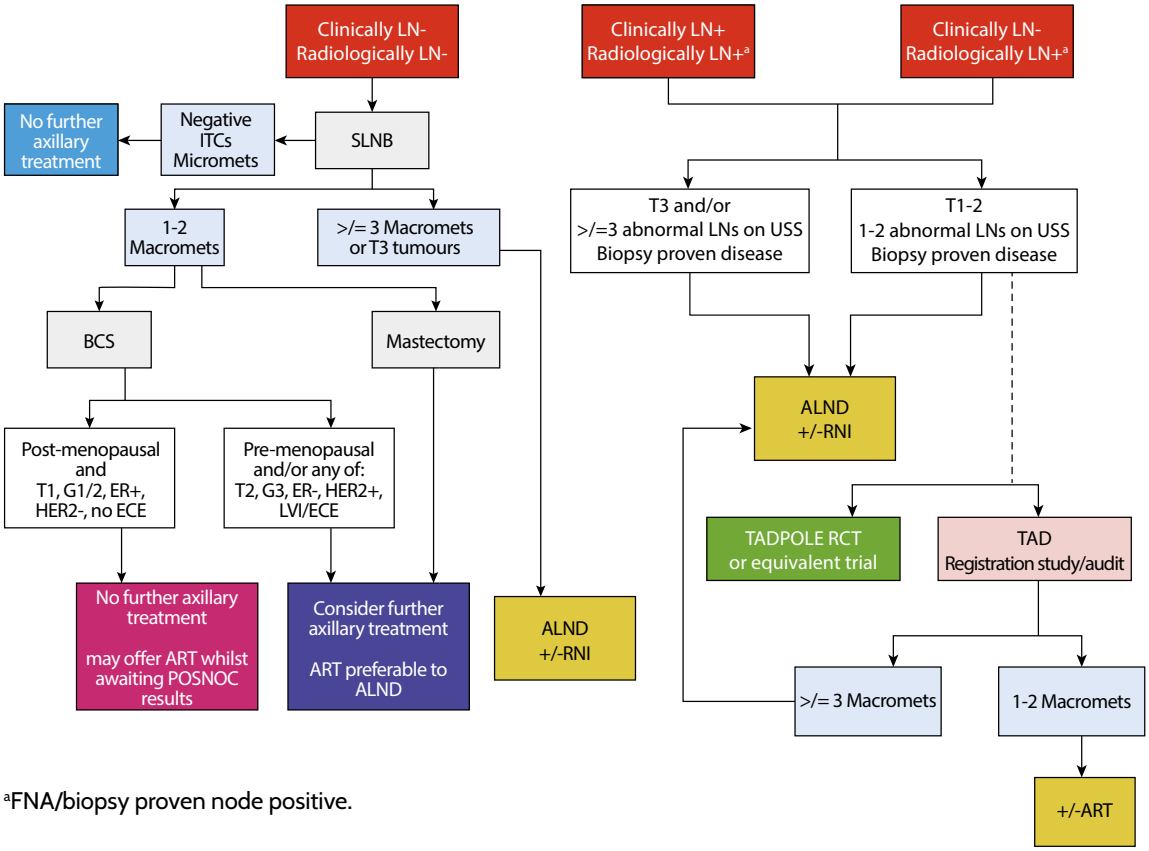
b) *For centres where upfront TAD is already standard of care for a defined subset of patients, (patients with T1-2 N1 disease, 1-2 abnormal lymph nodes on ultrasound with biopsy proven malignant node), recording data within a national audit should be considered. Otherwise, ongoing local data collection and audit of outcomes is recommended.*

c) *The need for axillary radiotherapy in upfront TAD should be discussed preoperatively at the MDT with the clinical oncologists. Whole breast radiotherapy alone can be considered for lower risk patients with T1, grade I or II, ER positive, HER2 negative tumours.*

d) *In the upfront TAD setting, strategies to minimize false negative rates might include dual localization and/or removal of at least 3 lymph nodes.*

e) *For patients with T3 tumours and/or >2 abnormal lymph nodes on ultrasound imaging, ALND is recommended (these patients are not eligible for TADPOLE).*

A summary of axillary management reflecting the above recommendations is shown in Figure 1. overleaf.



[a]FNA/biopsy proven node positive.

Figure 1
Algorithm for axillary management of primary surgical patients who are either clinically and radiologically node negative (left) or clinically and/or radiologically node positive with needle biopsy-proven a nodal metastases (right)

SECTION 4: OMISSION OF SENTINEL LYMPH NODE BIOPSY

Patients aged over 70 years, or patients with significant, life limiting comorbidity.

4.1) For patients only fit for surgery under local anaesthesia, if axillary clinical and radiological examination are normal, SLNB is likely to be futile, technically difficult and should be avoided. **[V/A]**

4.2) Older breast cancer patients (>70 years of age) with normal lymph nodes clinically and on ultrasound assessment, with significant co-morbidity, who are fit for surgery under general anaesthesia but unfit for adjuvant chemotherapy or CDK 4/6 inhibitors, do not require SLNB if meeting all of the following tumour criteria **[I/D]**:

a) ER positive
b) HER2 negative
c) Grade 1 or 2
d) T1 undergoing BCS or mastectomy or
e) T2 undergoing BCS and radiotherapy

4.3) Older patients (>70) with significant co-morbidity, precluding adjuvant chemotherapy or CDK 4/6 inhibitors, for cN0 and rN0 breast cancer may require SLNB if meeting the following criteria **[I/B]**

a) T2 tumours undergoing mastectomy (node status may indicate need for PMRT)
b) T3 or T4 tumours with higher risk of large volume axillary disease

Qualifying statements

Key issues relate to frailty and comorbidity, and some patients aged under 70 years may also have relatively high comorbidity and frailty scores and should also be managed accordingly. This might involve surgery performed under local or regional anaesthesia. Examples of frailty scores used routinely in the UK are the Electronic Frailty Index (eFI), the Clinical Frailty Scale (CFS) and the Rockwood Frailty Index. In all cases where surgery is planned, health status should be optimised before surgery and appropriate peri and post operative support planned in advance. This may involve engaging with primary care, general practice and anaesthetics.

In patients who lack capacity, family members and carers with legal power of attorney for health and welfare, should be engaged in a best interests meeting to decide on care.

Patients aged less than 70 years

4.4) For post-menopausal patients who are clinically lymph node negative with normal pre-operative axillary staging (ultrasound +/- biopsy of lymph node) having breast conserving surgery with adjuvant radiotherapy and systemic therapy planned, omission of SLNB can be considered if all the following criteria are met **[II/A]:**

a) Aged ≥60 years
b) T1 tumours
c) Grade 1 or 2
d) ER positive
e) HER negative

Qualifying Statements:

Omission of SLNB may be considered in other patients on a case-by-case basis (tubular or mucinous cancers, <15mm, grade 1, incidental detection of invasive disease (few millimetres or microinvasion) within an area of DCIS).

SECTION 5: NEOADJUVANT SYSTEMIC THERAPY

Timing of SLNB – before or after neoadjuvant chemotherapy (NACT)

5.1) SLNB should be undertaken following completion of chemotherapy in patients whose primary management for early-stage breast cancer is NACT. There is no overall benefit from performing upfront SLNB in terms of guiding decision-making for systemic and radiation therapy. **[II/A]**

Clinically/ radiologically lymph node negative patients at presentation

5.2) Clinically node negative patients (cN0) with a radiologically normal pre-treatment axilla (assessed by axillary ultrasound +/- negative needle biopsy (core biopsy/FNAC) should undergo SLNB after NACT. **[III/A]**

a) If the SLN(s) are pathologically negative or contain fibrosis consistent with treatment response and not related to pre-operative node biopsy, then no further axillary treatment is necessary **[III/A].** Axillary radiotherapy can be considered if fibrosis is present in 2 or more nodes. [V/C]

b) If any deposits of tumour are present in the sentinel lymph nodes measuring ≤0.2mm (ITCs), axillary radiotherapy can be offered instead of ALND. **[IV-B/C]**

c) If micro or macrometastases are present in the sentinel lymph nodes (measuring >0.2mm or above), ALND remains standard of care. **[III/A-B]**

Qualifying Statements:

Regional lymph node irradiation (RNI) can be combined with either breast radiotherapy or PMRT and confined to the ipsilateral non-dissected axilla above the level of dissection (hence the advice to mark the apex of the ALND with clips to facilitate RT targeting).*

Definitions:
** Axillary lymph node levels 1 – 4 and internal mammary lymph nodes*

Clinically/ radiologically lymph node positive patients at presentation

5.3) SLNB with targeted ALND (TAD) can be performed if there are 1-3 abnormal lymph nodes at diagnosis and normalisation of lymph nodes on imaging after NACT unless patients are being entered into clinical trials (e.g. ATNEC) where TAD in clinically node positive (cN1) but >3 abnormal lymph nodes patients is permissible **[III-IV/B]**. SLNB without TAD can also be used in this setting with a dual tracer approach and a minimum of 3 sentinel lymph nodes removed to reduce the false negative rate **[III/B]**.

Qualifying Statements:

These patients should be encouraged to consider participation in the ATNEC trial, which is investigating the role of additional axillary treatment in NACT patients with a complete pathological response in metastatic lymph nodes. Patients found to have non-malignant lymph nodes (ypN0) with SLNB/ TAD (in accordance with the ATNEC protocol) are randomised to observation or further axillary treatment.

5.4) If the SLN(s) are pathologically negative +/- nodal fibrosis consistent with treatment response, then axillary radiotherapy is the standard treatment. **[III/B]**. If no further axillary treatment is undertaken, and the patient is not in the ATNEC trial, long term outcomes (>5 years) should be locally recorded and audited. **[V/B]**

5.5) Further axillary treatment is recommended for patients with initially clinically positive nodes and positive sentinel nodes after NACT but containing only ITCs. **[IV/B-C]**. If the SLN(s) are pathologically positive with tumour foci measuring ≤0.2mm (ITCs), then axillary radiotherapy can be offered instead of ALND. **[IV/B-C]**

5.6) If the SLN(s) are pathologically positive and contain macrometastases or micrometastases (tumour foci >0.2mm), then ALND is currently the standard of care. **[III/B]**

5.7) Axillary radiotherapy is not recommended for patients with initially clinically positive nodes and positive sentinel nodes after NACT containing only micrometastases, where ALND is still standard of care. **[IV/B-C]**

5.8) For clinically node positive patients (cN1) with a pre-treatment axillary ultrasound and guided-needle biopsy confirming at least one metastatic node that is persistently abnormal on imaging after NACT (ycN1), SLNB is contraindicated and ALND is recommended. **[III-B]**

Qualifying Statements:

This will be reviewed following publication of the ALLIANCE trial (ClinicalTrials.gov ID: NCT01901094). Note that following NACT any residual ITCs are pathologically staged as ypN0(i+) but referred to as node positive.

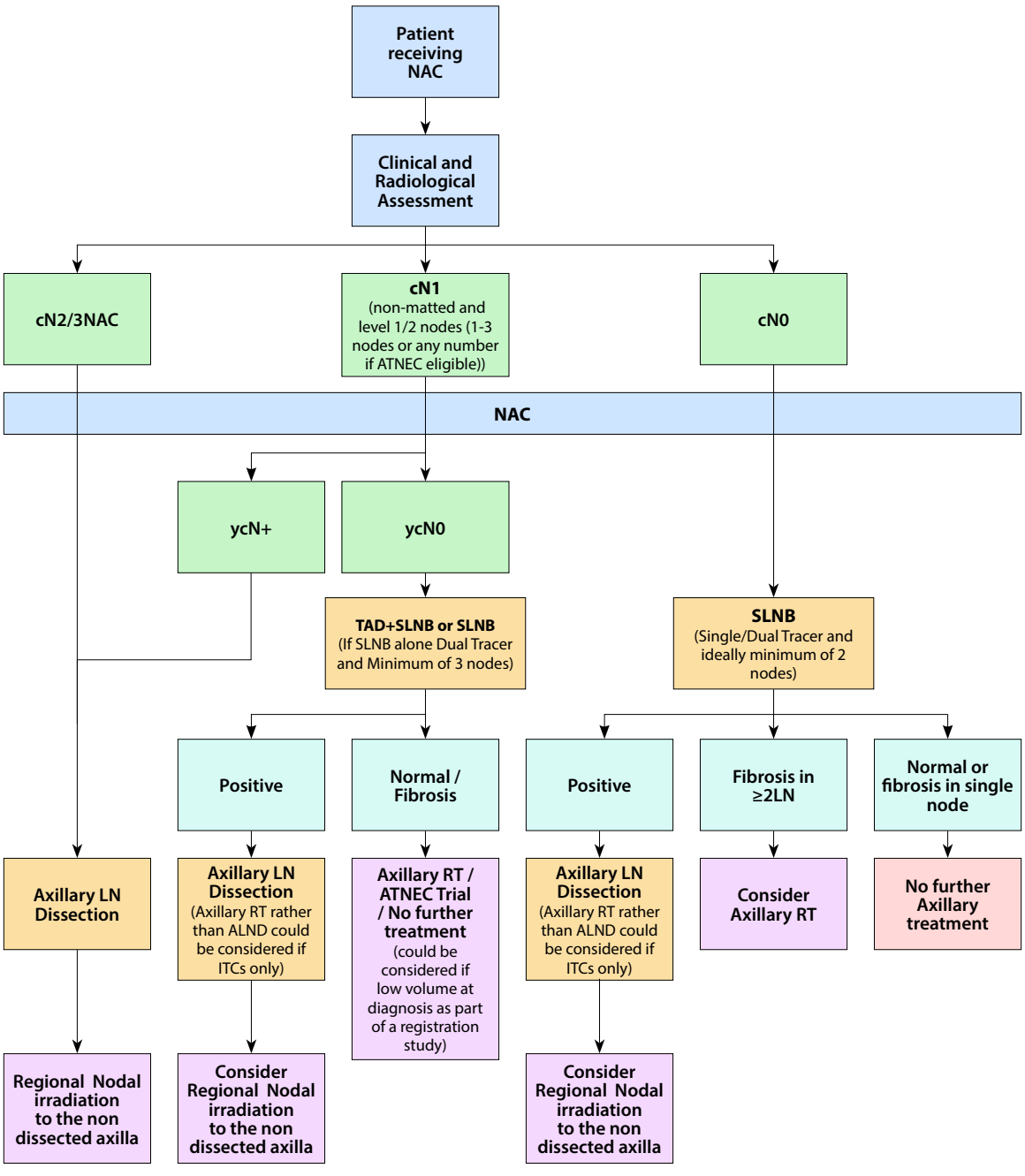
5.9) Patients with stage N2* or N3** disease after NAC should undergo ALND with de-escalation of surgery (SLNB or TAD) performed only if part of a trial or registration study. **[V/C]**

Definitions:
* matted axillary nodes at levels I and II
** N3a - ≥10 axillary nodes +/- infraclavicular nodes, N3b - internal mammary nodes, N3c - supraclavicular nodes

Qualifying Statements:

ycN1 patients may receive regional nodal irradiation combined with either breast radiotherapy or PMRT confined to the non-dissected axilla.

Figure 2.
Algorithm for axillary management of neoadjuvant chemotherapy patients with either clinically node negative (cN0) or clinically node positive (cN1, CN2/3) disease at presentation



SECTION 6: SPECIAL SCENARIOS

SLNB in patients with DCIS

6.1) Axillary surgical staging with SLNB is not routinely indicated for patients undergoing breast conserving surgery for localised DCIS lesions. **[II/A]**

6.2) SLNB can be considered for cases of pure DCIS that are clinically palpable but invasive disease has been excluded on repeat biopsy. **[III/A]**

6.3) SLNB could be considered in patients with more extensive DCIS (>50mm) that is being resected as part of a complex oncoplastic breast conserving procedure. **[IV/D]**

Qualifying Statements:

An upfront SLN localisation (as per the SENTINOT trial) may be considered for cases requiring complex oncoplastic procedures as delayed SLNB may be less accurate in these circumstances where extensive glandular remodelling may disrupt lymphatic flow pathways (as for mastectomy cases).

6.4) SLNB might be indicated for cases of DCIS associated with microinvasion taking account of factors such as extent and type of disease (high nuclear grade with necrosis) along with the patient's age (<40 years). **[III/C]**

6.5) Patients undergoing mastectomy for high- or intermediate-grade DCIS should routinely have SLNB at the time of mastectomy, but can be considered for sentinel node localisation prior to surgery (for example with a longer acting tracer such as a magnetic dye) with a possible delayed SLNB if an invasive diagnosis is subsequently made. **[III/A]**

6.6) The risks versus benefits of SLNB for mastectomy patients with low-grade DCIS should be discussed on an individual case-by-case basis. **[IV/C]**

Pregnancy-associated breast cancer

6.7) Pregnant women undergoing primary surgery for early-stage breast cancer, who are clinically node negative (normal axillary ultrasound), should have axillary staging with SLNB. **[III/A]**

6.8) Radioisotope is safe as a tracer agent for SLNB in women at any stage of pregnancy, but blue dye should be avoided due to staining of fetal tissue together with risk of anaphylaxis and teratogenesis. **[III/B]**

6.9) All pregnant patients with biopsy-proven axillary metastases who are not in receipt of NACT, and will not deliver before radiotherapy can be given, should undergo ALND as standard of care. **[II/A]**

6.10) There are currently no data to support use of targeted axillary dissection (TAD) as a component of primary surgery in pregnant women with a low burden of biopsy-proven node positive disease (≤2 abnormal nodes). Pregnant patients are excluded from recruitment to the TADPOLE study. **[V/D]**

Qualifying statements:

In general, multidisciplinary teams should follow the Pregnancy and Breast Cancer guidelines produced on behalf of the Royal College of Obstetricians and Gynaecologists in 2025[1]. The overriding principle is that treatment strategies should be the same as for non-pregnant patients wherever possible. The muti-disciplinary team should include obstetricians, fetal and neonatal specialists. This team should balance potential treatment for the patient and fetus with potential harm and compromise for pregnancy outcome.

SLNB for recurrent disease

6.11) Repeat SLNB for ipsilateral breast tumour recurrence (IBTR)) after previous breast conserving surgery is technically feasible and dual localisation methods should be used. **[III/A]**

6.12) Repeat SLNB should be routinely considered for re-staging axillary nodes in clinically node negative patients with IBTR who had <4 nodes retrieved at the original SLNB. **[III/B]**

6.13) Lymphoscintigraphy may improve the accuracy of repeat SLNB, because up to one-third of cases have an aberrant lymphatic drainage pattern. **[IV/D]**

Qualifying Statements:

Where a formal ALND has previously been undertaken and pre-operative imaging suggests residual nodes are present, axillary exploration can be performed rather than repeat SLNB. Attempts at nodal retrieval should be abandoned in the presence of extensive fibrosis within the axilla (review of axillary nodes on staging CT may provide useful information to aid surgical planning).

Inflammatory breast cancer

6.14) For all patients with a clinical diagnosis of inflammatory breast cancer (IBC) the current standard of care remains neoadjuvant systemic therapy followed by ALND, irrespective of pre-operative nodal status. Loco-regional therapy should be completed with irradiation of the chest wall and regional nodes (to include the non-dissected axilla). **[III/A]**

6.15) SLNB has not been adequately evaluated in this setting, with few if any high-quality studies of targeted sampling after NACT. These studies show low rates of sentinel node identification and high false negative rates. **[III/C]**

6.16) TAD is a promising technique in this setting with a higher success rate than standard SLNB and a low false negative rate, but additional studies are required to confirm these initial observations based on a single report only. **[III/C]**

Qualifying Statements:

Further studies should aim to identify those patients with inflammatory breast cancer most likely to achieve a pCR with NACT and whether surgical axillary staging with either SLNB or TAD can be safely employed in the future for cN1 patients with IBC and complete radiological response to induction chemotherapy (NACT).

Oncological outcomes should be carefully monitored for any techniques involving de-escalation of axillary surgery in this setting (and ideally documented within a registration study/registry).

Male Breast Cancer

6.17) Male breast cancer patients should be offered SLNB for staging the axilla in clinically node negative patients with T1 or T2 tumours. **[IV/A-B]**

6.18) SLNB can be considered for male breast cancer patients who are clinically node negative (cN0) with tumours exceeding 5cm provided there are no other high-risk features (grade 3, hormone receptor negative, HER2 positive). **[V/C-D]**

Qualifying Statements:

a) *Axillary management of those male patients with larger cNO tumours with more aggressive histological features should be discussed in a multidisciplinary setting.*

b) *Male breast cancer patients with clinically node positive tumours (cN1) confirmed with biopsy should proceed directly to ALND for initial surgical staging.*

c) *Clinically node negative patients with normal axillary nodes on ultrasound (or negative core biopsy/FNAC) who proceed to SLNB and are found to have any nodal metastases measuring ≤2mm* do not require further axillary treatment (ALND or axillary RT) irrespective of breast conserving surgery or mastectomy.*

d) *Further axillary treatment (ALND or axillary RT) is recommended for male breast cancer patients who have 1 or 2 sentinel nodes containing nodal metastases measuring >2mm**, irrespective of breast conserving surgery or mastectomy.*

e) *Axillary radiotherapy is preferred to ALND for mastectomy patients receiving PMRT.*

Definitions:
** isolated tumour cells (≤0.2mm) or micrometastases (>0.2mm and ≤2mm)*
*** macrometastases (>2mm)*

SECTION 7: RADIOLOGICAL DIAGNOSIS AND PATHOLOGICAL ASSESSMENT OF AXILLARY LYMPH NODE BIOPSY SPECIMENS

RADIOLOGY

7.1) For all newly diagnosed cases of early breast cancer routine diagnostic workup should include axillary ultrasound + biopsy of morphologically abnormal lymph nodes (US Ax grades 3,4 and 5) and documentation of the number of abnormal lymph nodes, as per guidance from the Royal College of Radiologists. **[V/A]**

7.2) Core biopsy is preferable to fine needle aspiration (FNA) because the sensitivity is generally higher but, with the necessary expertise, FNA can yield comparable results to core biopsy. **[I/A]**

PATHOLOGY

Sentinel lymph node biopsy (general considerations)

7.3) All sentinel lymph nodes should be sent from theatre in a clearly labelled and separate pot from non-sentinel nodes. The targeted (clipped) node should be sent from theatre in a separate pot. **[V/A]**

7.4) Handling of sentinel lymph nodes should be undertaken according to UK national guidelines[2]. In the laboratory each sentinel lymph node is thinly sliced and all embedded (if not overtly bearing metastasis) and examined independently. This usually means that a single section is examined from any node that is obviously involved macroscopically, but that macroscopically unremarkable nodes are sliced at 2 mm intervals parallel to the short axis, with each section embedded for subsequent histological examination. **[V/A]**

7.5) Examination of multiple levels and immunohistochemistry is not routinely necessary for any carcinoma subtype but may be helpful if there is a suspicion of malignancy on initial H&E sections. **[III/A]**

7.6) The pathology report should indicate the total number of nodes received and the number involved. **[V/A]**

Sentinel lymph node biopsy in the setting of primary surgical treatment

7.7) The pathology report should indicate the total number of nodes received and the number involved. **[V/A]**

7.8) Nodes containing ITCs only are not considered to be involved by metastatic disease for staging purposes (pNO(i+)). **[I/A]**

7.9) For single node involvement, the report should state whether involvement is by micrometastasis or macrometastasis. If more than one node is involved, and at least one contains a macrometastatic deposit, the total number of involved nodes should include those with both micrometastases and macrometastases. **[V/A]**

Sentinel lymph node biopsy in the setting of neoadjuvant chemotherapy

7.10) The presence of a marker must be included in the information provided on the specimen request. **[V/A]**

7.11) If a marker has been placed to identify a lymph node that was proven to be positive for metastatic carcinoma before neoadjuvant treatment, the marker clip site should be searched for by the pathologist. The report should indicate whether the marked node has been identified. **[V/A]**

7.12) In the post-neoadjuvant setting, any residual nodal disease (including ITCs) has prognostic significance, since this may represent a larger metastatic deposit that has partially responded, or treatment-resistant disease. Hence ITCs, as well as micro- and macrometastases, are considered to represent node positive disease in the neoadjuvant setting. **[III/A]**

7.13) Pathologists should report the presence of changes, such as fibrosis, in lymph nodes that is likely to represent response to therapy, both in nodes with and without residual malignant disease present. **[V/A]**

Axillary lymph node dissection

7.14) If there is a requirement for the apical lymph node to be examined separately, this should be clearly stated on the request and the node submitted in a separate pot. **[V/A]**

7.15) At macroscopic examination in the laboratory, the entire lymph node dissection specimen should be carefully inspected and palpated to yield the maximum number of lymph nodes for histological examination. **[V/A]**

7.16) It is acceptable for pathologists to submit one section of any obviously involved node for histology. **[V/A]**

7.17) Macroscopically uninvolved nodes should be serially sliced in a manner similar to that used for sentinel node biopsies and examined in their entirety. **[V/A]**

7.18) If the lymph nodes are histologically normal in a case with proven involvement pre-treatment, the pathologist should consider revisiting the specimen to ensure adequate sampling for histology. **[V/A]**

Intraoperative assessment

7.19) Intraoperative assessment of lymph nodes for metastatic disease may be appropriate in some cases, where it can allow sentinel node biopsy and subsequent axillary lymph node dissection to take place in a single operative procedure. **[IV/C]**

7.20) Frozen section examination is more sensitive than touch imprint cytology. **[I/A]**

7.21) OSNA is used in some centres, although current guidance states this is inappropriate in the neoadjuvant setting, since it may not detect evidence of treatment response or small volume but clinically significant residual disease. **[V/A]**

REFERENCES

1. Armstrong A, Gandhi A, Frank S, et al. Pregnancy and Breast Cancer: Green-top Guideline No. 12. BJOG 2025; 132(12): e194-e228.
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